AN ARRANGEMENT OF THE FAMILIES AND THE HIGHER GROUPS OF BIRDS.

R. W. SHUFELDT.

BIRDS constitute a class of the phylum Vertebrata, and belong to the branch Craniata. Above the latter subphylum they are associated with the Reptilia in the tribe Sauropsida, which last in time has divided into two now distinct classes, namely, Reptilia and Aves (see *A Classification of Birds, postea*). Of all the existing vertebrate groups, birds are, morphologically speaking, the most homogeneous; probably none of the phyla recognized by zoölogists are more so. There is a very considerable gap between a thrush and an ostrich, but it in no way compares, in the matter of profundity, with the gap that stands between man and the duckbill, or between an elephant tortoise and a garter snake. This morphological homogeneity in birds by no means renders their taxonomy any the less difficult for us; indeed, for very obvious reasons it greatly tends to enhance the intricacies of the problem. This fact is now so generally appreciated by avian classifiers that it is quite needless to discuss it in the present connection.

To classify birds correctly and to point out the natural relationships and interrelationships of all the species and subspecies now in existence we resort to various lines of research and employ data of widely different nature. In the field of palæontology we meet with a mass of material, the comparative study of which has led to the conviction that Aves and Reptilia have arisen from a common stock. The indications of this have by no means died out in certain existing representatives of these two classes of the Sauropsida. For example, it is quite apparent when we come to trace the ancestry of the existing ostrich and its surviving allies in various quarters of the globe. The trend backward in time is distinctly reptile-wards and eventually brings one to the consideration of a long-extinct assemblage of

forms from which not only have the ostriches arisen, but both modern birds and reptiles have been derived.

In the classification of existing birds, again, we have recourse to their anatomical structure or morphology, and incidentally their physiology to assist us, the first of these being a very powerful aid. By morphology is meant the science of the outer form and internal structure, and to be of practical value in taxonomy it must be made thoroughly comparative. As far as possible we also study the morphogenesis of birds or the genesis of form in their case through evolution. Of great assistance is the knowledge we derive from our researches into the comparative ptilosis and pterylography of the group and all that pertains to these related sciences. In our efforts, too, to seek out the true relationships of birds in order to arrive at a natural classification we must take into consideration, in the broadest possible sense, their embryology; their oölogy and nidiology; their habits and comparative longevity, and even their various notes and songs must be given due weight. Their geographical distribution, a very important factor to be studied in their taxonomy, is to be considered not only from the viewpoint of the present distribution of the species of the class over the earth's surface, but likewise a comprehension, as far as possible, of the question as to how that distribution came about. The data for the latter, in the case of birds, are extremely meagre, as it takes into consideration the migration and original habitats of various forms of the class during geologic times, and as but very few fossil remains of birds have been discovered in any part of the world, there has been in consequence but very little light thrown upon this latter side of the question. So far as it goes, however, it has its value, as has also, to some extent, a consideration of the migrations, *per se*, of existing species and subspecies.

In some of these sciences, as in the case of ptilosis and pterylography for example, not only must both sexes be studied and compared, but the young at all stages of their existence. Both ptilosis and pterylography furnish very useful data to assist us in the classification of Aves, and as exponents of a bird's topographical anatomy, for this purpose they are quite co-equal in the matter of importance with the osteological system of the internal

structure; indeed, ptilosis, pterylography, and osteology stand among the most important factors at our command, in the

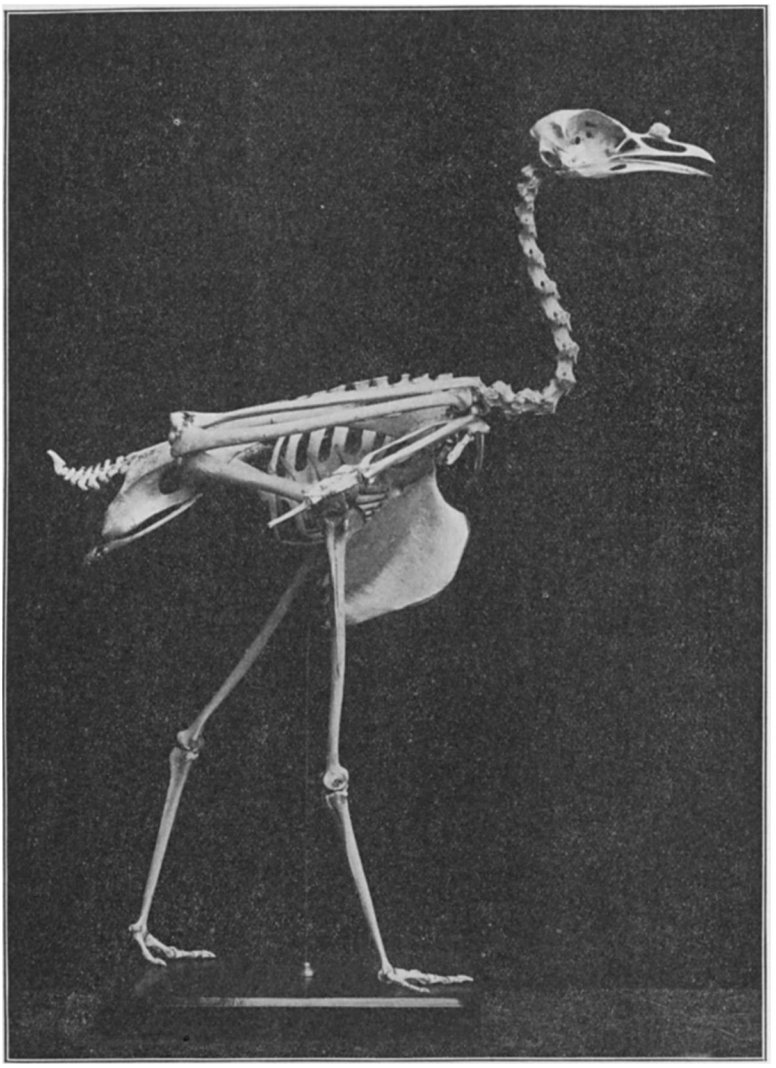

FIG. 1.—Skeleton of the Great Bustard. *Otis tarda* Linn. The enlargement on the upper mandible is abnormal. Coll. Natl. Mus. No. 12,315.

economy of this group of vertebrates, that become available in their classification. Right here it will be as well to state, how-

ever, that we will never arrive at the true and natural classification of birds, through the employment for that purpose of any *single set* of morphological characters.

A study of the skeleton in birds, for example, carries us a long way toward an understanding of their various alliances and relationships; this is particularly the case on account of what is to be derived from avian palæontology, — the bones being, with few exceptions, the parts preserved. It is extremely unsafe and dangerous to the science of this subject, however, to thus employ the osseous system alone. The taxonomical scheme based upon such knowledge should be modified and corrected by the employment of every other fact, every particle of information that has been made known in the matter. To this end various characters that have been found to exist in the muscular, the arterial, the digestive, the nervous and other systems have proved to be of considerable use.

A comparative study of the beaks and feet; the various characters presented on the part of the plumage, especially as to color, structure, and style, often constitute admirable checks on a classificatory scheme of the class based on osteological data. Food and other habits when properly studied, and the results applied, are also efficient aids to establishing many of the primary divisions in our scheme; and a consideration of such data without reference to facts of any other kind, is sufficient to enable us to refer a duck, a hawk, or a thrush to their proper places in a taxonomical arrangement. In other particulars nidiological and oölogical studies are of value taken in connection with the anatomical and other ones enumerated. Some birds build no nest at all, others construct them of all manner of shapes and sizes and out of all manner of materials. Some birds lay but a single egg, while others may lay a dozen or more; some eggs are plain white and unspotted, others are of other colors and unspotted, still others are variously marked or possess other peculiar characters, — all such facts, however, when properly comprehended and assorted, may be employed in classification with distinct advantage. For example, certain birds possessing an association of osteological characters in their skeletons lay but two white eggs in an elaborately constructed arboreal nest,

while no other existing birds of the class Aves have a similar association of characters and habits. Here then nidiological and oölogical facts support and emphasize osteological ones in establishing affinities. Again, were we told that we had before us the

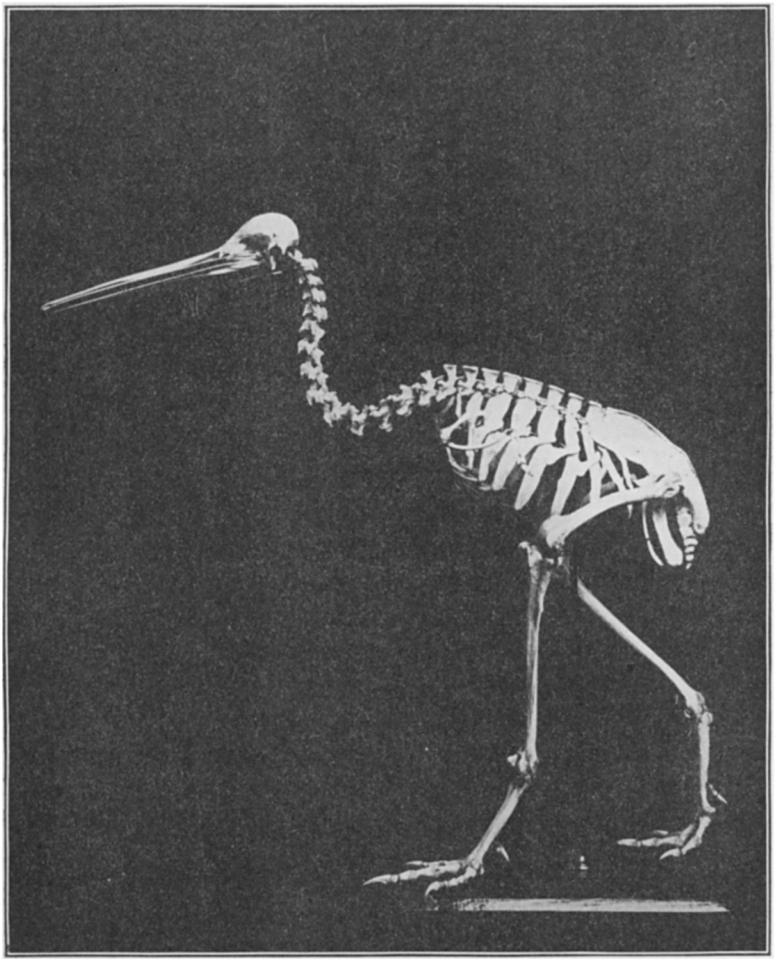

FIG. 2. — Skeleton of the Kiwi, *Apteryx australis* Shaw. Coll. Natl. Mus. No. 11,416.

skeletons of two *small* birds *in each* of which the osseous mandibles were slender and short; the nasals holorhinal; the basipterygoid processes absent; while in the sternum the keel was

well developed, and the posterior margin of the body of the bone presented *no notches whatever*, we would be quite at a loss to say what the two species were, but the moment that we added to these osteological characters the fact that it was also known that in the case of one bird it laid its *single* white egg in a burrow in the ground, while the other laid *several* white eggs in a little basket-like nest built by itself and found within the cavity of some great hollow tree, we would not hesitate to say but what the skeleton of the first belonged to some one of the smaller petrels, and that of the second to a swift, and very possibly a Chætura. Your opinion is considerably strengthened when you are told that the bird laying the single white egg had webbed feet, and was strictly a marine species, while the other possessed no such character of the feet, and was a typically insectivorus aërial land bird. When still other characters from other anatomical systems and parts are added, the true relations of the two species can be fixed with absolute certainty. In the present instance they chance to be very remote, although this by no means seemed to be the case when only the few osteological characters were mentioned. Such researches place forms in their proper groups, but to decide upon, or to discover the true relationships of, the families and main groups to each other is an entirely different matter and infinitely more difficult.

It is very important indeed that we should thoroughly comprehend the origin and evolution of such an assemblage of vertebrate forms as birds, and it is highly important, too, that we classify existing birds in such a manner that our classification conveys to the mind not only an orderly arrangement of our knowledge upon this subject, but a scheme representing as near as possible the actual and natural relationship of the major and minor groups of birds as they now exist. To convey such a scheme to the mind various plans and methods have been proposed and adopted by a number of ornithological taxonomers at different periods of the history of the science. It is not necessary that all of these be described here,— a few of the more prominent examples will answer our purpose. In his memoir "On the Osteology of Gallinaceous Birds and Tinamous," read before the Zoölogical Society of London on the 25th of

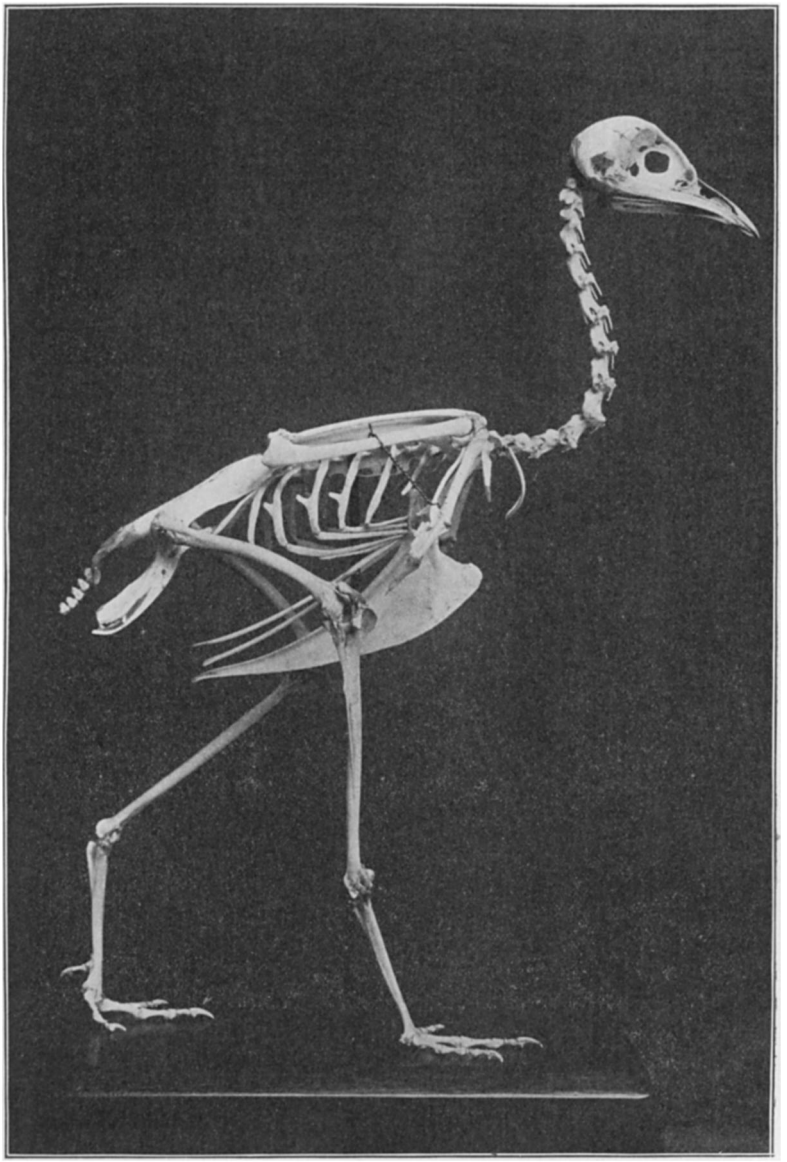

FIG. 3.—Skeleton of the spotted Tinamou, *Nothura maculosa* Temn. Coll. Natl. Mus. No. 17,949.

November, 1862, Professor Wm. Kitchen Parker gives us one of the earliest methods of setting forth in print the relationships of a number of birds treated of in the work named. These had to do with genera and not with families, and he conveyed his ideas on their relationships in two ways. One of these consisted in a method of what might be termed grouping, and the other the columnar method, or as it is sometimes called, the "linear," for the fact that the genera, or families, or the higher groups are printed in a linear sequence following in an order determined by what is supposed to be their relationships. Thus Parker said in the above quoted memoir on page 235, "I will first show, in two parallel columns, how both the Fowls and the Rails run insensibly through certain leading genera into the lowest (reptilian) types of diving-birds."

Notornis		Gallus	
Brachypteryx		Crax	
Ocydromus		Talegalla	
Tribonyx		Palemedea	
Crex		Anseranas	
Rallus		Plectropterus	
Gallinula		Anser	
Porphyris		Anas	
Fulica		Fuligula	
Podilymbus		Harelda	
Podiceps		Biziura	
Podica		Merganser	
Aptenodytes	Phalacrocorax	Colymbus	Alca

This method has its advantages, also its many disadvantages, and Parker felt the weight of some of these when he placed at the foot of the first column Aptenodytes aside from but near to Phalacrocorax, and in the second column Colymbus aside from Alca. So on the very next page or two (236, 237) he resorts to the grouping method and uses it in the case of Pluvialis, Talegalla, Hemipodius, Syrrhaptes, and Tinamus. This plan is well shown in the case of the last named genus,— thus :

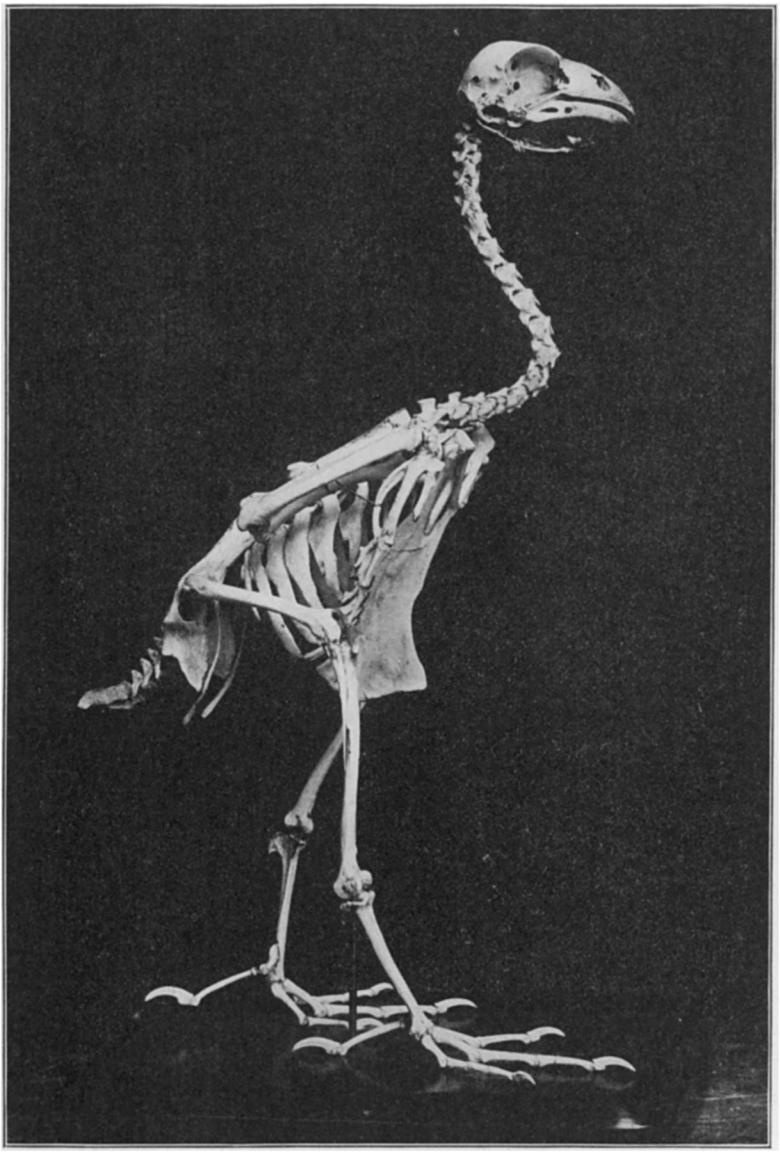

FIG. 4. — Skeleton of the Hoatzin, *Opisthocomus crustatus* Gmel. Coll. Natl. Mus. No. 18,518.

Gallus

Charadrius Dendrortyx Ocydromus

Syrrhaptes Hemipodius

TINAMUS

Apteryx Rhea

Casuarius

MAMMALIA REPTILIA

It is very evident that such a method of grouping could never be adopted, for to treat in general *all* the genera in any such a manner would certainly fill the subject with confusion, and the same would apply to the families being dealt with and printed according to any such an arrangement. It answers fairly well in the case of exhibiting the relationships of a single genus or other group, and for this purpose it has been adopted by some. A modification of this scheme consists in joining the names by *straight lines* in order to render the kinships more evident. This doubtless led to the use of the phylogenetic tree, a plan which will be more fully described farther on. In the matter of the linear method, with various modifications it has been employed by not a few avian taxonomers. Sharpe arranged Huxley's (1867) classification of Birds in this way in his now famous paper entitled, "A Review of Recent Attempts to Classify Birds" (1891, p. 4); Garrod resorted to it, and so did Sclater. Alfred Newton did to a limited extent, while Reichenow, Stejneger, and Fürbringer have presented complete schemes of avian classification in this manner,— Reichenow and Fürbringer employing the phylogenetic tree in connection with it. To some extent Seebohm also used the linear method, and Sharpe illustrating the latter employed a "diagrammatic map" giving the Seebohmian "Orders" in small circles, these circles bearing certain relations to each other, which relations were supposed to represent in a way, and convey to the mind, the relations the groups of birds themselves bore to each other. Finally these orders were surrounded by broken lines in such a manner as to show the kinships and connections of the subclasses found in Seebohm's scheme (*loc. cit.*, pp. 44–48). Sharpe also in his "Review" gives us an admirable example of the linear scheme

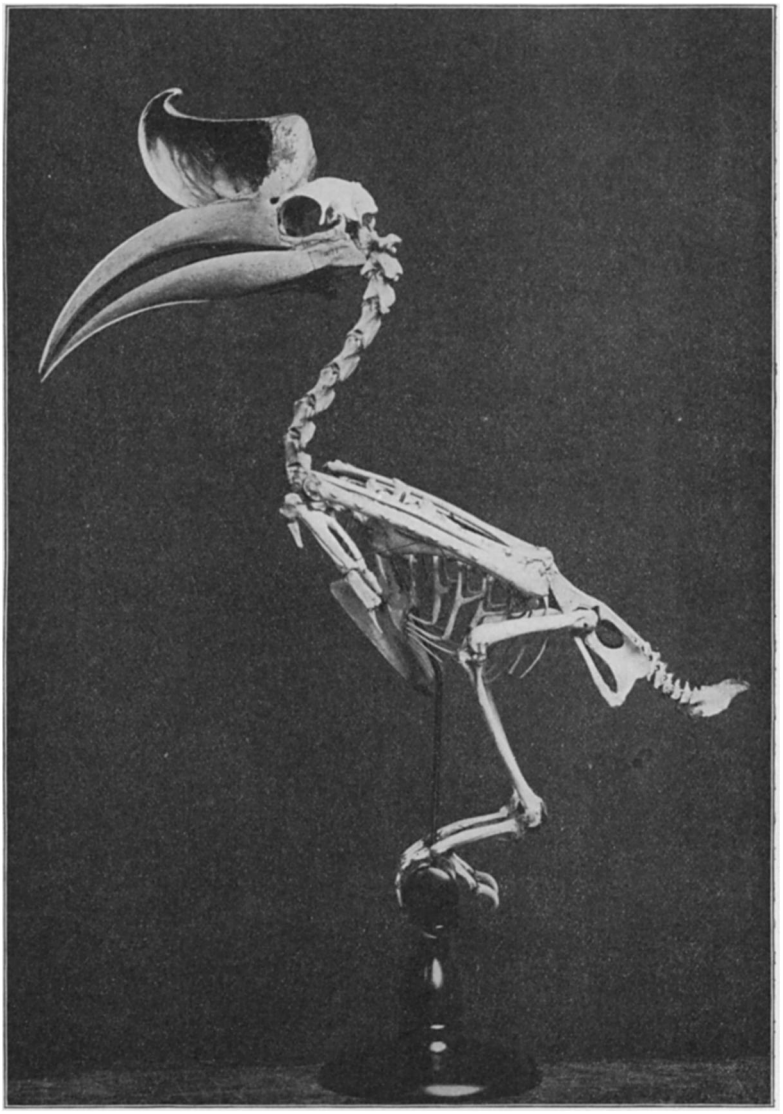

FIG. 5. — Skeleton of the Rhinoceros Hornbill, *Buceros rhinoceroides* Temn. Coll. Natl. Mus. No. 18,755.

of classification, and this is rendered vastly more useful from the fact that many of the *characters* of the suborders are conveniently footnoted in the same arrangement. He also employed the 'circle system' in several plates in his memoir, as well as a modification of the 'radiating line system,' and both with more or less effect (Plates IX–XII). This plan of presenting group characters is excellent in many particulars, and in connection with a modified linear scheme it has been employed by Cope in his Classification of Aves (*Amer. Nat.*, Vol. XXIII, No. 274, Oct., 1889, p. 869), and also by Hans Gadow (*P. Z. S.*, 1889). Still earlier than these it was used by Garrod (*P. Z. S.*, 1874).

Turning to the plan of the 'Phylogenetic Tree,' it has, among other authors, notably been employed by Reichenow (*Vögel. der Zoologichen Gärten*, 1882) and Max Fürbringer ("Untersuchungen zur Morphologie und Systematik der Vögel": '*Bijdragen tot de Dierkunde*,' Amsterdam, 1888. Tafln XXVI, XXVII). Reichenow's "Tree" is a very crude representation, and needs no special description in this place. It has, however, an historical interest for us, and a good copy of it may be found in Dr. Sharpe's 'Review' on page 23. A far more elaborate and widely known representation is Fürbringer's 'Phylogenetic Tree of Birds.' This brings up the main stem from the reptilian root-stock, from which, as it ascends, are thrown off the now dead limbs of a number of more or less known or even hypothetical groups of avireptilian or reptilioavian forms. Farther up, more extensive branches carry out the evolution of the main ostrich types, and soon above these the generous and complete development of the tree,—its many more or less closely dividing and branching limbs, boughs and stems, showing all the main modern or existing groups as they are supposed to have been given off from each other, or else to have arisen from the main trunk. This tree is horizontally divided by imaginary planes at certain points, dividing it into upper, lower and middle sections or horizons. Viewing the projections of these vertically we have the circular sections of the various branchings of the tree before us, and these will again give the relations to each other of the various groups. Three such projections are

obtained, which Fürbringer has represented for us upon three plates. The horizontally divided stems produced by these cutting planes are also grouped by a system of three kinds of

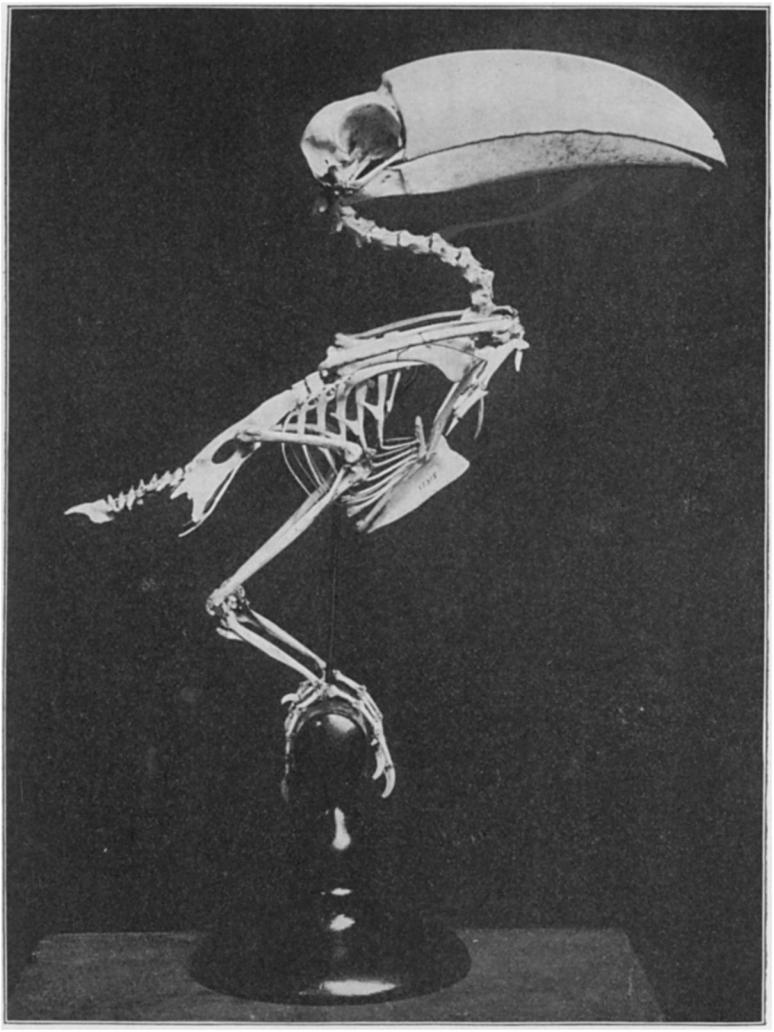

FIG. 6 — Skeleton of the Red-billed Toucan, *Rhamphastus carinatus* Swainson. Coll. Natl. Mus. No. 17,315.

surrounding lines which associate, in the opinion of this eminent authority, the minor and major groups in such a manner as to

have them furnish the requisite data upon which the linear scheme of this classification has been based. Without any manner of doubt this is the most elaborate provisional scheme of the classification of Birds extant, and beyond all question, in most particulars, the relationships of the groups as therein represented are correct, and, as far as possible, convey to our minds what has taken place in their evolution.

In setting forth a scheme of classification, the principal objection to the linear method is that it does not properly represent the branching or the derivation of new groups in time as the taxonomer has them in his mind. It brings some groups too close together, throws others too far apart, and in some instances in the lineal descent interpolates groups among others in such a way as to either do violence or misrepresent the true affinities and relationships of the forms as they exist or have existed in nature. By the employment of the phylogenetic tree we obviate a great many of these objectionable features so dangerous to the credit of a natural classification. Still notwithstanding all this, the *linear* method has been adopted in the present memoir, and for the reason that it is believed that the time is not yet at hand again, when the making of another elaborate phylogenetic tree for birds would be considered justifiable as we are still in the provisional stage. Therefore it has been adopted here. Further, it has been thought better to weave into this scheme such fossils of extinct types and species of birds as have come to hand, and this has likewise been done. For the rest, I have been influenced in the classification here set forth by my having read the literature of ornithology since boyhood; by my having studied everything that pertains to birds for a period extending over thirty years. This study has been constant, and has been undertaken in the field, in the closet and in the dissecting room. It has been devoted to every department of ornithology and of ornithotomy and morphology.

These studies have been supplemented by similar studies in the structure and habits of many mammals, reptiles, batrachians, fishes and other groups. These latter researches have convinced me that to render the matter of classification more homogeneous with respect to the vertebrate in general, or in fact to express

the conditions as they really occur in nature, the Class Aves is susceptible of being divided into but *two* orders, — the first or Order I, including the SAURURÆ, and the second, or Order II, including all other bird-forms, whether extinct or existing, that do not belong to Order I. This Order II is known as the ORNITHURÆ. There can be no possible doubt but what in the early history of birds these two orders arose from the same general ancestral stock, but during the geologic ages that have followed since, myriads of species have become extinct and the remains of this vast host have never, save in a few isolated instances, ever been found or seen by us. Hence the profundity of the gap now existing between the Saururæ and the Ornithuræ. As wide as this gap is, however, the discovery of a very few of the extinct and intermediate types would tend to greatly lessen its width. Nevertheless, we must classify the forms as we have them, and as we find them, and to do this consistently we must recognize the two orders aforesaid.

Fürbringer in his classification considers the Saururæ and the Ornithuræ each to represent a subclass. In this I cannot agree with him. Birds offer no such division, and are, as a matter of fact, too homogeneous in their structure to admit of it.

The Saururæ, as is well known, are at present represented by that unique, if it be unique, form Archæopteryx of the family Archæopterygidæ. There is every reason to believe that there once existed higher divisional groups of this family, therefore the order Saururæ is here subdivided into the supersuborder Archornithiformes and the suborder Archornithes (see "A Classification of Birds," *postea*). As thus created this order is capable of admitting into it any other fossil genus or genera of birds allied to Archæopteryx, whether they come from the Jurassic age of the Mesozoic epoch of Bavaria or from any other geologic horizon in any other part of the world. So far as is at present known they represent the oldest avian types in the hands of science.

The classification of birds set forth in the present memoir carries the arrangement down to include the families only, while for the higher groups, intermediate between the order and the family, I employ the superfamily, the suborder and the super-

suborder. To my mind such divisions can be very profitably employed to express the normal relationships of birds as they exist, and the relative nearness to each other of the various groups as compared with other natural assemblages of the Vertebrata.

Passing now to the consideration of the second order of birds (Order II, Ornithuræ) we meet at first with the array of the so-called ostrich forms it contains, or supersuborder II. These represent some of the lowest types of existing bird forms, and a number of extinct species allied to them have been discovered. It will not be necessary to discuss the systematic position of the Dromæognathæ (supersuborder II) for the reason that I have already recently done so in a paper published in *The American Naturalist* (Vol. XXXVII, No. 433, January, 1903, pp. 33–64. 2 figures), and this likewise applies to the supersuborder III, the Odontoholcæ. The Odontoholcæ are placed next in order after the ostrich-forms not for the reason that they possessed anything in their osseous systems that in any way connected them with the Dromæognathæ, but because they represent the archaic ancestral stock from which has been derived the existing Supersuborder Colymbo-Podicipitiformes (IV) containing the loons, divers, and grebes, and these last in the matter of organization stand among the lowest of known types of modern birds.

This group has been thoroughly treated in my published papers. A few of the more important groups, however, are still in press, as for example the "Osteology of the Accipitres" (Carnegie Museum); "Osteology of the Anseres" (Carnegie Museum); and the "Osteology of the Lariformes" (complete in manuscript). I now offer my scheme for *A Classification of Birds*. This classification requires in some of the groups illustrations in the way of bird skeletons that I have heretofore been unable to publish, and which will throw additional light upon the subject. These have been kindly photographed for me at the U. S. National Museum at Washington, and reproductions of those photographs are herewith presented, with the necessary descriptions.

A Classification of Birds.

Phylum : —
Vertebrata.
Branch : —
Craniata.
Tribe : —
Sauropsida.
Classes : —
Reptilia.
Aves.

Class Aves.

Order I. Saururæ.

Supersuborder	I.	Archornithiformes.
Suborder	I.	Archornithes.
Family	I.	Archæopterygidæ.

Order II. Ornithuræ.

Supersuborder	II.	Dromæognathæ.
Suborder	II.	Struthionithes.
Family	I.	Struthionidæ.
Suborder	III.	Rheornithes.
Family	I.	Rheidæ.
Suborder	IV.	Casuariornithes.
Family	I.	Dromaiidæ.
	II.	Casuariidæ.
	III.	Dromornithidæ.
Suborder	V.	Dinornithes.
Family	I.	Dinornithidæ.
Suborder	VI.	Æpyornithes.
Family	I.	Æpyornithidæ.
Supersuborder	III.	Odontoholcæ.
Suborder	VII.	Pygopoformes.
Superfamily	I.	Hesperornithoidea.
Family	I.	Enaliornithidæ.
	II.	Hesperornithidæ.

Supersuborder	IV.	COLYMBO-PODICIPITIFORMES.
Suborder	VIII.	PYGOPODES.
Superfamily	I.	Podicipoidea.
Family	I.	Podicipidæ.
Superfamily	II.	Urinatoroidea.
Family	I.	Urinatoridæ.
Supersuborder	V.	APTENODYTIFORMES.
Suborder	IX.	IMPENNES.
Family	I.	Spheniseidæ.
	II.	Cladornithidæ.
Supersuborder	VI.	PROCELLARIIFORMES.
Suborder	X.	TUBINARES.
Family	I.	Procellariidæ.
	II.	Puffinidæ.
	III.	Pelecanoididæ.
	IV.	Diomedeidæ.
Supersuborder	VII.	PELECANIFORMES.
Suborder	XI.	STEGANOPODES.
Superfamily	I.	Pelecanoidea.
Family	I.	Pelecanidæ.
	II.	Pelagornithidæ.
	III.	Phalacrocoracidæ.
	IV.	Odontopterygidæ.
	V.	Anhingidæ.
	VI.	Sulidæ.
Superfamily	II.	Phaëthonitoidea.
Family	I.	Phaëthontidæ.
Superfamily	III.	Fregatoidea.
Family	I.	Fregatidæ.
Supersuborder	VIII.	ICHTHYORNITHIFORMES.
Suborder	XII.	ICHTHYORNITHES.
Family	I.	Ichthyornithidæ.
	II.	Apatornithidæ.
Supersuborder	IX.	LARIFORMES.
Suborder	XIII.	LONGIPENNES.
Family	I.	Rhynchopidæ.
	II.	Stercorariidæ.
	III.	Laridæ.

Suborder	XIV.	ALCÆ.
Family	I.	Alcidæ.
Suborder	XV.	CHIONIDES.
Family	I.	Chionididæ.
Supersuborder	X.	CHARADRIIFORMES.
Suborder	XVI.	LIMICOLÆ.
Family	I.	Charadriidæ.
	II.	Arenariidæ.
	III.	Hæmatopodidæ.
	IV.	Aphrizidæ.
	V.	Scolopacidæ.
	VI.	Phalaropodidæ.
	VII.	Recurvirostridæ.
Superfamily	I.	Jacanoidea.
Family	I.	Jacanidæ.
Suborder	XVII.	CURSORÆ.
Family	I.	Thinocoridæ.
	II.	Dromadidæ.
	III.	Glareolidæ.
	IV.	Cursoriidæ.
Superfamily	II.	Otidoidea.
Family	I.	Œdicnemidæ.
	II.	Otididæ.
Supersuborder	XI.	STEREORNITHIFORMES.
Suborder	XVIII.	STEREORNITHES.
Family	I.	Phororhacidæ.
Supersuborder	XII.	GRUIFORMES.
Suborder	XIX.	GRUES.
Superfamily	I.	Gruioidea.
Family	I.	Gruidea.
	II.	Psophiidæ.
Superfamily	II.	Cariamoidea.
Family	I.	Cariamidæ.
Superfamily	III.	Eurypgoidæ.
Family	I.	Eurypygidæ.
	II.	Rhinochetidæ.
	III.	Mesitidæ.
	IV.	Aptornithidæ.

Supersuborder	XIII.	RALLIFORMES.
Suborder	XX.	FULICARIÆ.
Superfamily	I.	Heliornithoidea.
Family	I.	Heliornithidæ.
Superfamily	II.	Ralloidea.
Family	I.	Rallidæ.
	II.	Aramidæ.
Supersuborder	XIV.	APTERYGIFORMES.
Suborder	XXI.	APTERYGES.
Family	I.	Apterygidæ.
Supersuborder	XV.	GALLIFORMES.
Suborder	XXII.	HEMIPODI.
Family	I.	Hemipodidæ.
Suborder	XXIII.	CRYPTURI.
Family	I.	Crypturidæ.
Suborder	XXIV.	GALLINÆ.
Family	I.	Megapodidæ.
	II.	Cracidæ.
	III.	Phasianidæ.
	IV.	Tetraonidæ.
	V.	Odontophoridæ.
	VI.	Numididæ.
	VII.	Meleagridæ.
Suborder	XXV.	OPISTHOCOMI.
Family	I.	Opisthocomidæ.
Supersuborder	XVI.	PTEROCLIDIFORMES.
Suborder	XXVI.	PTEROCLETES.
Family	I.	Pteroclididæ.
Supersuborder	XVII.	COLUMBIFORMES.
Suborder	XXVII.	COLUMBÆ.
Family	I.	Treronidæ.
	II.	Columbidæ.
	III.	Peristeridæ.
	IV.	Gouridæ.
	V.	Didunculidæ.
Suborder	XXVIII.	DIDI.
Family	I.	Didididæ.
Supersuborder	XVIII.	PALAMEDEIFORMES.

Suborder	XXIX.	PALAMEDEÆ.
Family	I.	Palamedeidæ.
Supersuborder	XIX.	ANSERIFORMES.
Suborder	XXX.	ANSERES.
Family	I.	Gastornithidæ.
	II.	Anatidæ.
Supersuborder	XX	PHŒNICOPTERIFORMES.
Suborder	XXXI.	PHŒNICOPTERI.
Family	I.	Palæolodidæ.
	II.	Phœnicopteridæ.
Supersuborder	XXI.	PELARGIFORMES.
Suborder	XXXII.	HERODIONES.
Family	I.	Ibididæ.
	II.	Plataleidæ.
	III.	Ciconiidæ.
	IV.	Scopidæ.
	V.	Ardeidæ.
	VI.	Balænicipitidæ.
Supersuborder	XXII.	ACCIPITRIFORMES.
Suborder	XXXIII.	ACCIPITRES.
Superfamily	I.	Falconoidea.
Family	I.	Serpentariidæ.
	II.	Falconidæ.
	III.	Milvidæ.
	IV.	Pandionidæ.
	V.	Vulturidæ.
Superfamily	II.	Cathartoidea.
Family	I.	Cathartidæ.
Supersuborder	XXIII.	PSITTACIFORMES.
Suborder	XXXIV.	PSITTACI.
Superfamily	I.	Psittacoidea.
Family	I.	Nestoridæ.
	II.	Loriidæ.
	III.	Cyclopsittacidæ.
	IV.	Cacatuidæ.
	V.	Psittacidæ.
Superfamily	II.	Stringopoidea.
Family	I.	Stringopidæ.

Supersuborder	XXIV.	STRIGIFORMES.
Suborder	XXXV.	STRIGES.
Family	I.	Bubonidæ.
	II.	Strigidæ.
Supersuborder	XXV.	CAPRIMULGIFORMES.
Suborder	XXXVI.	STEATORNITHES.
Family	I.	Steatornithidæ.
Suborder	XXXVII.	PODARGI.
Family	I.	Podargidæ.
Suborder	XXXVIII.	CAPRIMULGI.
Family	I.	Caprimulgidæ.
Supersuborder	XXVI.	CORACIIFORMES.
Suborder	XXXIX.	LEPTOSOMATI.
Family	I.	Leptosomatidæ.
Suborder	XL.	CORACIÆ.
Family	I.	Coraciidæ.
Supersuborder	XXVII.	HALCYONIFORMES.
Suborder	XLI.	HALCYONES.
Family	I.	Dacelonidæ.
	II.	Alcedinidæ.
Suborder	XLII.	BUCEROTES.
Family	I.	Bucerotidæ.
Suborder	XLIII.	UPUPÆ.
Family	I.	Upupidæ.
	II.	Irrsoridæ.
Suborder	XLIV.	MEROPES.
Family	I.	Meropidæ.
Suborder	XLV.	MOMOTI.
Family	I.	Momotidæ.
Suborder	XLVI.	TODI.
Family	I.	Todidæ.
Supersuborder	XXVIII.	TROCHILIFORMES.
Suborder	XLVII.	TROCHILI.
Family	I.	Trochilidæ.
Supersuborder	XXIX.	JACAMARIFORMES.
Suborder	XLVIII.	GALBULÆ.
Family	I.	Bucconidæ.
	II.	Galbulidæ.

Supersuborder	XXX.	TROGONIFORMES.
Suborder	XLIX.	TROGONES.
Family	I.	Trogonidæ.
Supersuborder	XXXI.	COCCYGIFORMES.
Suborder	L.	MUSOPHAGI.
Family	I.	Musophagidæ.
Suborder	LI.	COCCYGES.
Family	I.	Cuculidæ.
Supersuborder	XXXII.	COLIFORMES.
Suborder	LII.	PAMPRODACTYLÆ.
Family	I.	Coliidae.
Supersuborder	XXXIII.	PICARIFORMES.
Suborder	LIII.	CAPITONES.
Family	I.	Capitonidæ.
Suborder	LIV.	RHAMPHASTIDES.
Family	I.	Rhamphastidæ.
Suborder	LV.	INDICATORES.
Family	I.	Indicatoridæ.
Supersuborder	XXXIV.	PICIFORMES.
Suborder	LVI.	PICI.
Family	I.	Picidæ.
Supersuborder	XXXV.	CYPSELIFORMES.
Suborder	LVII.	CYPSELI.
Family	I.	Macropterygidæ.
	II.	Cypselidæ.
Supersuborder	XXXVI.	EURYLÆMIFORMES.
Suborder	LVIII.	EURYLÆMI.
Family	I.	Eurylæmidæ.
Supersuborder	XXXVII.	MENURIFORMES.
Suborder	LIX.	MENURI.
Family	I.	Menuridæ.
Supersuborder	XXXVIII.	ATRICHONITHIFORMES.
Suborder	LX.	ATRICHONITHES.
Family	I.	Atrichonithidæ.
Supersuborder	XXXIX.	PASSERIFORMES.
Suborder	LXI.	MESOMYODI.
Family	I.	Pteroptochidæ.
	II.	Conopophagidæ.

	III.	Formicariidæ.
	IV.	Dendrocolapidæ.
	V.	Tyrannidæ.
	VI.	Pipridæ.
	VII.	Cotingidæ.
	VIII.	Phytotomidæ.
	IX.	Pittidæ.
	X.	Philepittidæ.
	XI.	Xenicidæ.
Suborder	LXII.	ACROMYODI.
Family	I.	Hirundinidæ.
	II.	Muscicapidæ.
	III.	Campophagidæ.
	IV.	Pycnonotidæ.
	V.	Timelidæ.
	VI.	Mimidæ.
	VII.	Troglodytidæ.
	VIII.	Cinclidæ.
	IX.	Turdidæ.
	X.	Sylviidæ.
	XI.	Vireonidæ.
	XII.	Ampelidæ.
	XIII.	Prionopidæ.
	XIV.	Lanidæ.
	XV.	Sittidæ.
	XVI.	Paridæ.
	XVII.	Zosteropidæ.
	XVIII.	Dicæidæ.
	XIX.	Nectariniidæ.
	XX.	Meliphagidæ.
	XXI.	Certhiidæ.
	XXII.	Mniotiltidæ.
	XXIII.	Motacillidæ.
	XXIV.	Alaudidæ.
	XXV.	Fringillidæ.
	XXVI.	Drepanidæ.
	XXVII.	Cærebidæ.
	XXVIII.	Tanagridæ.

Family XXIX.	Ploceidæ.
XXX.	Icteridæ
XXXI.	Oriolidæ.
XXXII.	Dicruridæ.
XXXIII.	Eulabetidæ
XXXIV.	Sturnidæ.
XXXV.	Paradiseidæ.
XXXVI.	Corvidæ.